Panasonic

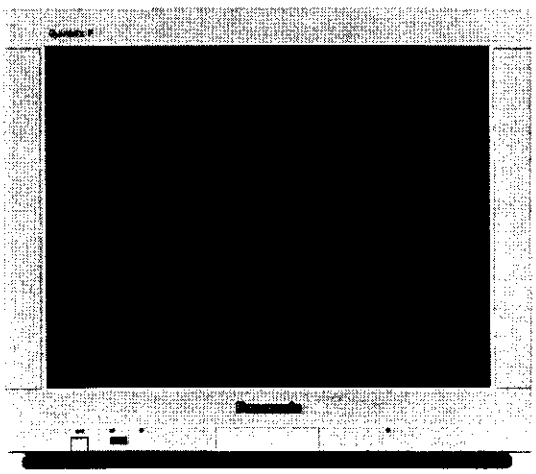
Stereo Colour Television
Operating Instructions

TC-68P90A

TX-68P90Z

(With Teletext)

[tau]
FLAT
DIGITAL



Please read these operating instructions completely before operating this set and retain the booklet for future reference.

TQB4A0134

Dear Panasonic Customer,

Welcome to the Panasonic family. We hope that you will have many years of enjoyment from your new Colour Television.

Please retain your proof of purchase along with these operating instructions. Space has been made available on page 37 of this instruction book for recording the Serial Number. The Serial Number can be found on the back cover of the set and on the packing carton.

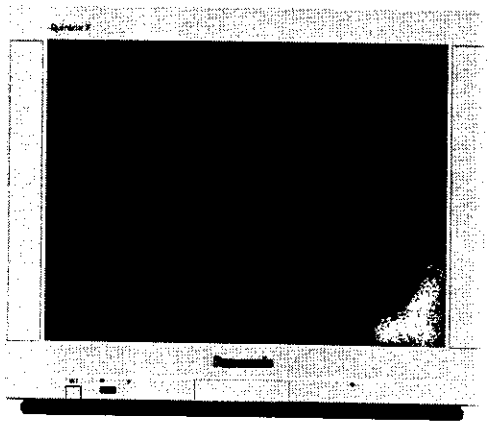
Important Information

Programme Location Numbers

This television comes to you "factory tuned" to all the major capital city broadcast stations. Adjustments to the tuning should not be necessary. However, if you have to make adjustments, please read these instructions carefully first. Throughout this booklet "Programme Location Numbers" are referred to. *These are memory locations into which you can tune television broadcast stations.* Any television station can be tuned into any Programme Location Number.

Picture Quality

All televisions are affected by Magnetic Interference.



Magnetic interference may come from such things as unshielded motors, moving the TV while it is switched ON, turning off a vacuum cleaner too close to the TV, lightning strikes nearby or many other things.
The interference shows up as *coloured patches* which appear while the TV is switched ON.

A typical result may look like the picture shown.

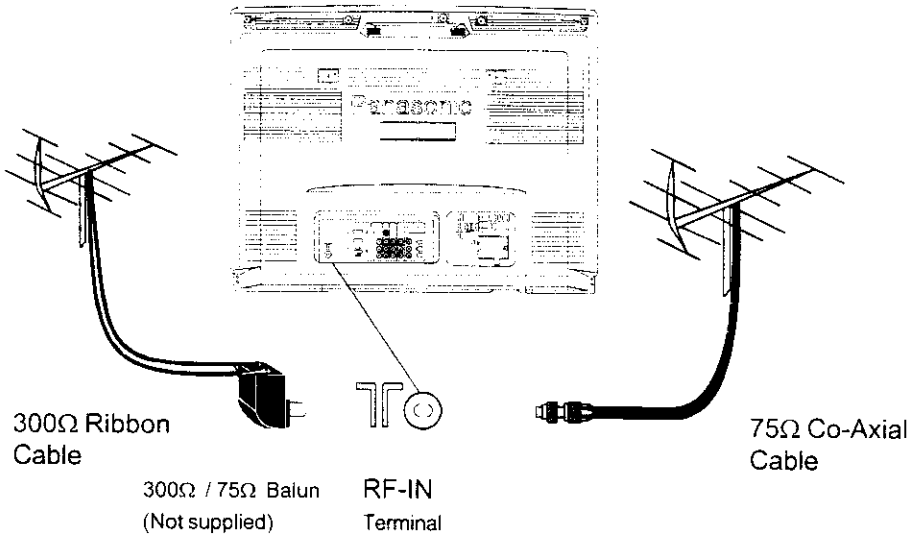
- Your Panasonic Television is designed to overcome this with the inclusion of a demagnetising (degaussing) function.
- To activate this feature, simply switch your Television OFF with the Power On/Off Switch (not with the remote control) for 30 minutes and then switch it back ON.
- If the television is to be left unattended for extended periods (several days or more), turn the power off to the unit. DO NOT leave in Stand-by mode.
- This will ensure that you enjoy the picture clarity as it was meant to be.

Refer to page 17 for operating instructions for the GEOMAGNETIC feature.

Getting Started

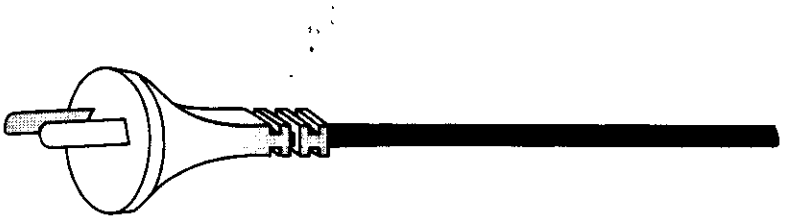
Connect the Aerial

The RF (Aerial) Input impedance of this television is 75Ω. If your aerial lead is 300Ω ribbon (two wires separated by a flat plastic sheet) you will require a 300Ω/75Ω Balun in order to connect your aerial to the television.



For your safety any external aerial should be installed by a reputable qualified installer and should comply with Australian Standard AS1417.1 or International Standard EIS597-1.

Connect the Power Plug



This television is designed for the Australian Standard Mains Voltage of 240V 50Hz and the New Zealand Standard Mains Voltage of 230V 50Hz.

NOTE:
If the television is not going to be used for an extended period, remove the power plug from the wall outlet.

Turn on the Television

Push the Power Switch to turn the television ON. Sit back and enjoy your new Panasonic television.

CONTENTS

Battery Installation and Replacement 6
Battery Precautions 6

Television Control Panel Buttons 7
Control Panel 7
Control Panel Buttons 7
⏻ POWER 7
DISPLAY 8
TV/AV 8
PRE. 8
−◢ + VOLUME DOWN and UP 8
∨ ∧ PROGRAMME NUMBER DOWN and UP 8

Remote Control Television Operation 9
Remote Control Television Buttons 9
SURROUND 10
⏻ STAND-BY 10
0 ~ 9 DIRECT PROGRAMME NUMBER SELECTION 10
- / - - TWO DIGIT PROGRAMME NUMBER SELECTION 10
RECALL 11
MAIN MENU 11
▲▼◀▶ POSITION BUTTONS 11
OFF-TIMER 11
STEREO / MONO 11
D.PNR 12
SOUND MUTE 12
TV / AV 12
NORMALISATION 12
P-AI 12

Main Menu 13
Picture Menu Operation 14
Sound Menu Operation 15
Features Menu Operation 16
Features Menu Operation 17
Language Menu Operation 17
Preset Menu Operation 18

Remote Control VCR/LD/DVD Operation 19
Remote Control VCR/LD/DVD Buttons 20
◀◀ REWIND / REVIEW 20
⏻ POWER BUTTON 20
■ STOP 20
VCR/LD/DVD 20
❚❚ PAUSE 20
▶ PLAY 20
▶▶ FAST FORWARD / CUE 20
❚❚▶ STILL ADVANCE / DISC SIDE A SELECTION 20
RECORD / DISC SIDE B SELECTION 20
PROGRAMME NUMBER UP & DOWN / PROGRAMME SKIP 20
Manufacturers' Code Settings 21

CONTENTS

Teletext Operation (TX-68P90Z Only) 22
Remote Control Teletext Operation (TX-68P90Z Only) 22
Number Buttons 23
F/T/B (Full / Top / Bottom) 23
TV/TEXT 23
■ ■ ■ COLOUR CODED BUTTONS 23
F.P. (Favourite Page) 23
TIME TEXT 23
Λ V PAGE NUMBER UP & DOWN BUTTONS 23
INDEX 23
HOLD 23
REVEAL 23
Text Menu Operation (TX-68P90Z Only) 24

Tuning Procedure 25
Channel Selection Mode 25
Position Select (POS.) 26
Direct Select 26
SYS Selection Mode 27
Channel Allocation 27
Automatic Tune 28
Manual Tune 29
Tuning the Television to a VCR 29
Colour SYS 30
Fine Tuning (Automatic Frequency Control) 31
Canceling the Fine Tuning 31
Skip Operation 32
How to Cancel the Skip Operation 32

Connecting Equipment to the TV 33
Connecting Headphones 33
Front Panel Connections 33
Rear Panel Connections 33
Connecting a Standard VCR to the AV Input 34
Connecting S-Video & DVD Equipment to the AV Input 34
Monitor Out 35

Customer's Record 35

Customer Information 36
Warnings 36
Cautions 36
Cleaning the Television 37
Locating the Television 37
Caring for the Television 37
Caring for the Remote Control 37

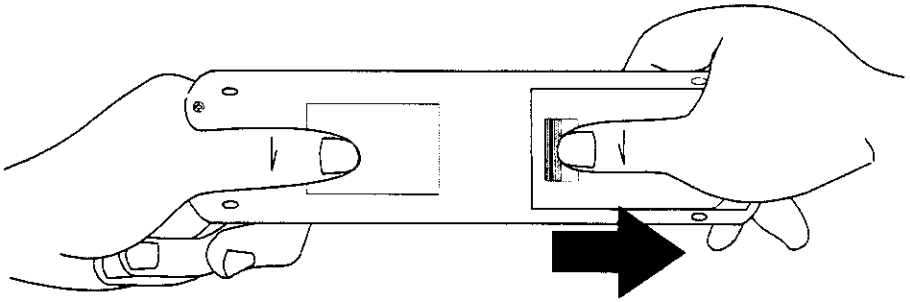
Troubleshooting 38

Specifications 39

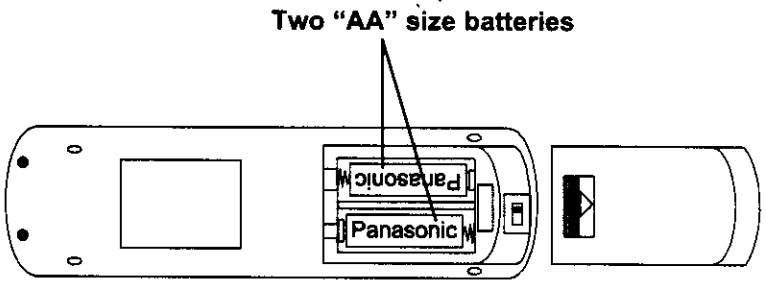
Getting Started

Battery Installation and Replacement

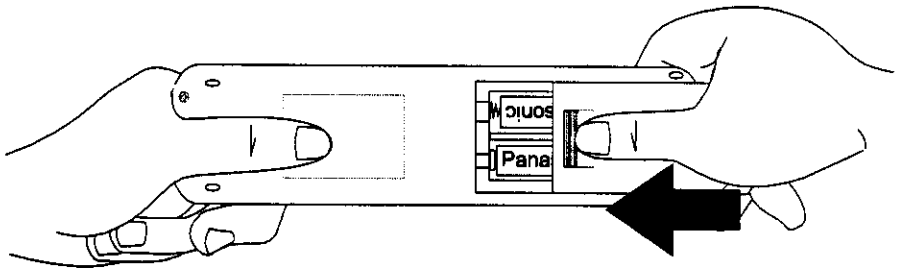
1. **Open the Battery Cover**
   Hold the remote control as shown. Place your thumb on the battery cover triangle. Apply a slight downward pressure with the thumb and slide the cover back. This allows the cover to be removed.



2. **Replace the Batteries**
   Insert the batteries ensuring the correct polarity. The polarity is identified by the " + " symbol on the battery and the " + " and " - " symbols on the battery compartment. The springs inside the battery compartment connect to the negative terminal of the battery.



3. **Replace the Battery Cover**
   Fit the battery cover and slide it forward until it "clicks" into place.



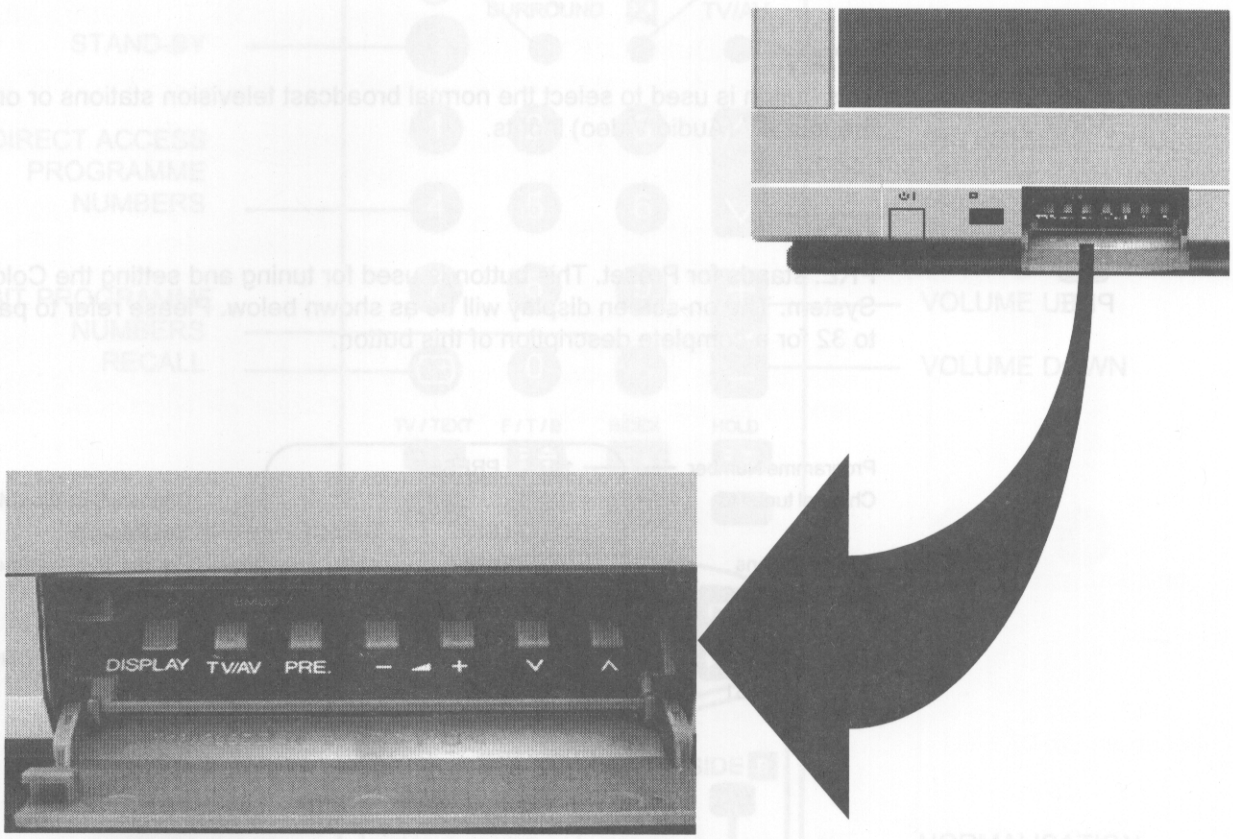
Battery Precautions

- **Do Not** use rechargeable batteries. Differences in size and performance may cause incorrect operation.
- **Do Not** mix battery types (Alkaline with zinc-carbon etc.)
- **Do Not** mix old and new batteries. Replace both batteries at the same time.
- **Do Not** attempt to recharge batteries.
- **Do Not** short circuit batteries.
- **Do Not** disassemble batteries.
- **Do Not** heat or burn

Television Control Panel Buttons

Control Panel

Open the control panel door to gain access to the Television Controls Push the door at the point marked ● to open. Push again to close.



Control Panel Buttons

BUTTON	WHAT IT DOES
⏻ I	**POWER** This button is used to turn the television on and off. The Indicator light will glow orange whenever the television is plugged into the mains (with power on). When the television is turned ON the light will glow green. When the television is in Stand-By the light will glow red.

Television Control Panel Buttons

BUTTON — WHAT IT DOES

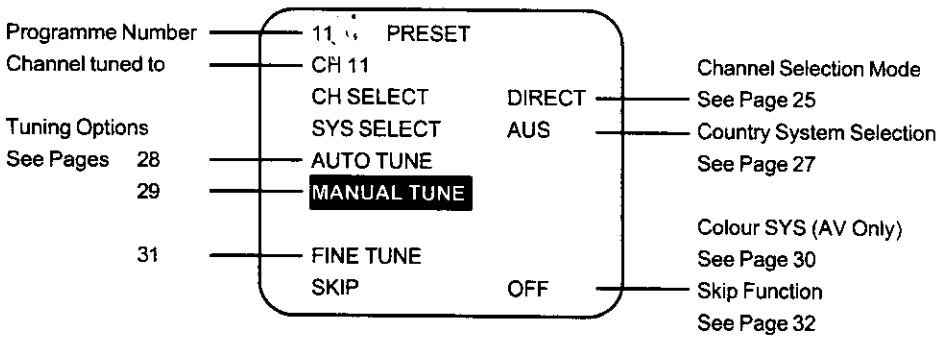
DISPLAY
Pressing the Display Button will display "Panasonic" on the screen. It will also normalise the viewing conditions. See page 14. The display will turn off after a few seconds.

TV/AV

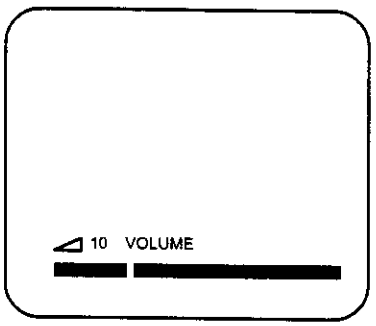
TV/AV
This button is used to select the normal broadcast television stations or one of the four AV (Audio/Video) inputs.

PRE.

PRE.
PRE. stands for Preset. This button is used for tuning and setting the Colour System. The on-screen display will be as shown below. Please refer to pages 25 to 32 for a complete description of this button.



VOLUME DOWN and UP
These buttons are used to reduce (-) or increase (+) the volume output level from the television. The volume level is indicated on the screen as a green bar and as a number (0 ~ 63).

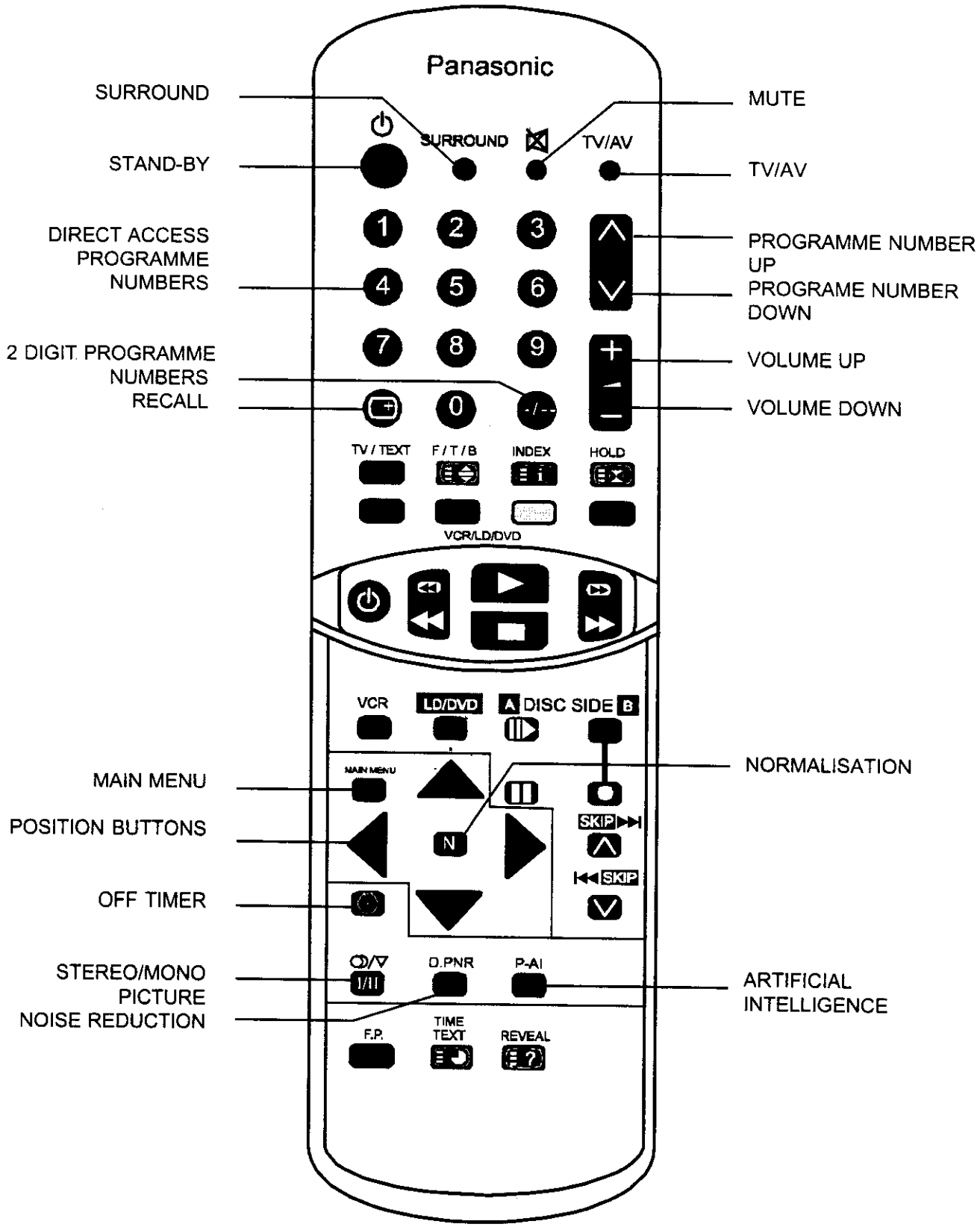


V Λ

PROGRAMME NUMBER DOWN and UP
Pressing these buttons selects the next lower (V) or higher (Λ) Programme Number in sequence. Programme Numbers which have been "Skipped" (See page 29) will be bypassed when this button is used.

Remote Control Television Operation

Remote Control Television Buttons



NOTE: The remote control for the TC-68P90A does not have Teletext control buttons.

For details of VCR, LD and DVD remote control operation, please refer to page 19.
For details of Teletext remote control operation, please refer to page 22.

Remote Control Television Operation

BUTTON — WHAT IT DOES

SURROUND

SURROUND

Surround sound is designed to recreate the spatial effect of a movie theatre or concert hall. It brings added depth to the sound from your television.

Pressing this button

- During Stereo broadcasts switches between "STEREO SURROUND" and "SURROUND OFF".
- During Mono broadcasts switches between "MONO SURROUND" and "SURROUND OFF".
- In the AV Mode switches between "STEREO SURROUND" , "MONO SURROUND" and "SURROUND OFF".

STAND-BY

The remote control button is used to turn the television into Stand-by mode. When the television is in Stand-By it is possible to turn it back on by pressing this remote control Power Button, the Programme Number UP or DOWN Button (front panel or remote control) or any of the direct Programme Number Buttons.

0 ~ 9

DIRECT PROGRAMME NUMBER SELECTION

Single Digit Programme Numbers (0 to 9) can be accessed directly by pressing the corresponding number on the Remote Control Transmitter.

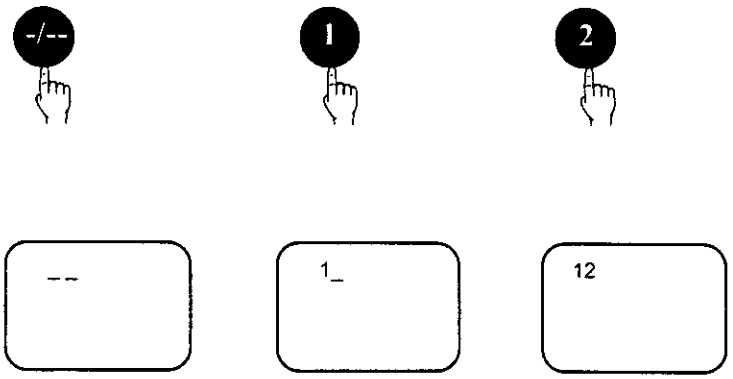
Note: In the DIRECT Mode (see page 26) you can select Broadcast Channels up to 125 by using these buttons to select the channel directly. For example: to select channel 120, press the 1 Button, the 2 Button and the 0 Button in sequence. Buttons must be pressed within one and a half seconds of the previous button for this function to work.

-/--

TWO DIGIT PROGRAMME NUMBER SELECTION

To directly access Programme Numbers 10 to 99, press the "- / - -" Button followed by the two digits required. For example, to select Programme Number 12:

The On-Screen display will be as shown:



Remote Control Television Operation

BUTTON — WHAT IT DOES

RECALL

This button operates in three stages.

Stage 1 - Pressing this button will display all current active functions. The functions that can be displayed include AV Number, Programme Number, Sound Option, Picture Option, Stereo or Mono and Off-Timer setting. After about 2 seconds it automatically switches to stage 2.

Stage 2 - Pressing the button again displays the Programme Number or the AV Number and the Off-Timer setting.

Stage 3 - Pressing for the third time cancels the recall function **and removes the text being displayed on the screen.**

MAIN MENU

MAIN MENU

Pushing this button allows you to access the following options: -

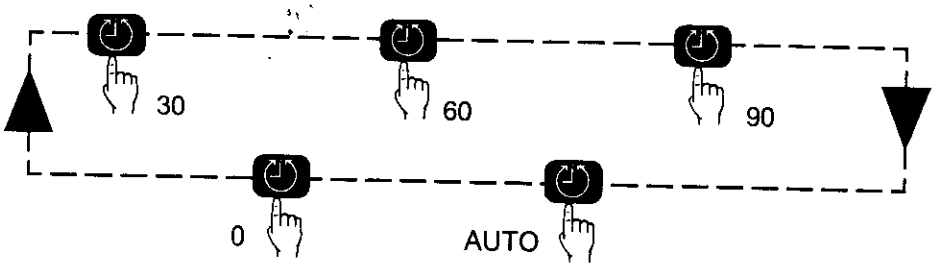
PICTURE	see page 14
SOUND	see page 15
FEATURES	see page 16
LANGUAGE	see page 17
PRESET	see page 18

POSITION BUTTONS

These buttons (Up, Down, Left and Right) are used to select menu options and change levels of selected functions.

OFF-TIMER

Pressing the Off-Timer allows the television to be preset to turn off after a period of time. The timer settings (in minutes) are:



Setting the Off-Timer to AUTO will cause the television to go into Stand-by five minutes after the television broadcast station you are tuned to stops transmitting. Setting the OFF-TIMER to 0 cancels the timer operation.

CD/▽

I/II

STEREO / MONO

Pushing the button changes the mode from Stereo (CD) to Mono (▽) and back again. Normally the television will detect whether the broadcast signal is Mono or Stereo and will set the mode accordingly. If the Stereo signal is weak or if the receiving conditions are not the best, it is recommended that the Mono mode be manually selected.

BILINGUAL *

This system allows two languages to be transmitted on one signal. Switching between the Main (I) and Sub (II) positions selects the desired language.

* **Note:** Bilingual sound is not currently available in Australia or New Zealand.

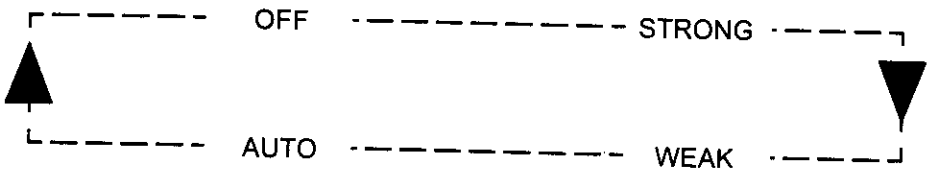
Remote Control Television Operation

BUTTON — WHAT IT DOES

D.PNR

D.PNR

This Picture Noise Reduction system is designed to reduce picture noise during poor quality reception conditions. Pushing this button will change the D.PNR setting as shown:



SOUND MUTE

Pressing this button reduces the sound from the television to nil. Pressing the button again returns the sound to the original setting. Pressing the Volume Up (+) will also restore the volume level setting. Pressing the Volume Down (-) Button will reduce the volume level but will keep it muted.

TV/AV

TV / AV

Pressing the TV/AV Button will cycle between TV, AV1, AV2, AV3, AV4 and back to TV.

PROGRAMME NUMBER UP & DOWN

Pressing this button selects the next higher (∧) or lower (∨) Programme Number in sequence. Programme Numbers which have been "Skipped" (See page 29) will be bypassed when this button is used.

VOLUME UP & DOWN

This button is used to increase (+) or decrease (-) the volume output level from the television. The volume level is indicated on the screen as a green bar and as a number (0 ~ 63).

N

NORMALISATION

The Normalisation Button is used to reset the television to factory set levels. Colour, Sharpness, Contrast, Brightness, Treble, Bass and Balance will be reset. The button will only operate if the menu is displayed on the screen.

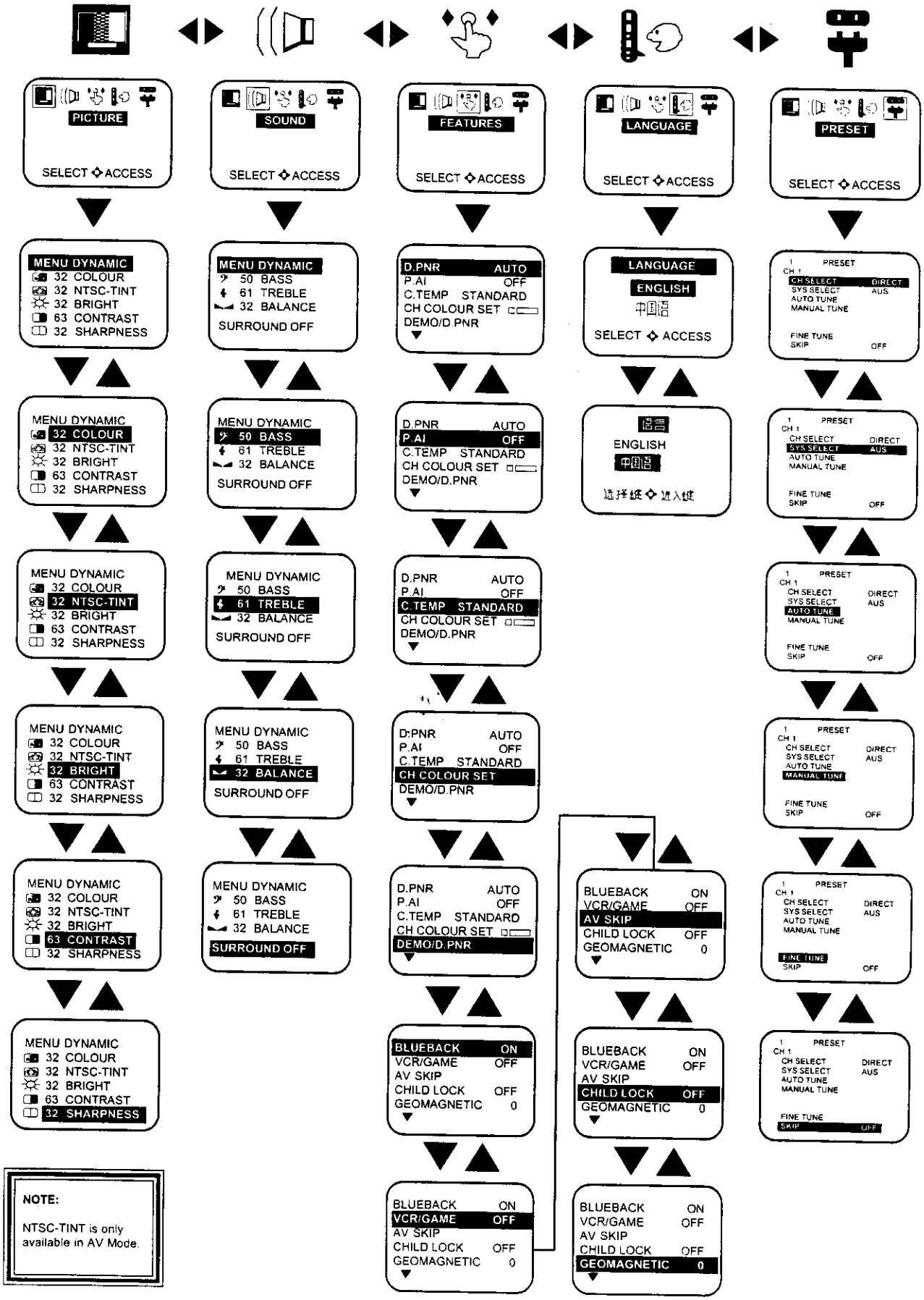
P-AI

P-AI

P-AI stands for Picture – Artificial Intelligence.
Pushing the button turns the P – AI mode from ON to OFF and back again.
When the P – AI is turned on it continually and precisely detects fine differences in the picture signal. It also detects the differences in the brightness, black level and contrast levels. This function automatically adjusts the picture to the best possible quality for the scene and reproduces images that provide a sense of depth.

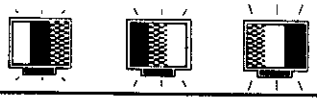
Main Menu

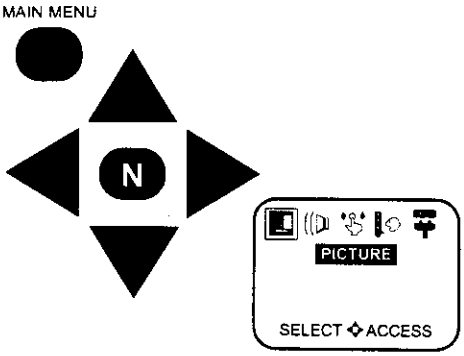
Press the MAIN MENU button. Use the Left (◀) or Right (▶) Button to move between menu items The on screen icon display will appear as shown below. Press again to turn Main Menu Off.



Main Menu

Picture Menu Operation



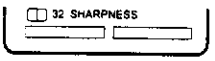


1. Push the MAIN MENU Button.
2. Select the PICTURE Menu using the Left (◀) or Right (▶) Button. When the Picture symbol is highlighted, the PICTURE Menu has been selected. Push the Down (▼) Button to access the Menu options.
3. Choose the option by using the Up (▲) or Down (▼) Buttons.
4. Adjust the setting of the option using theLeft (◀) or Right (▶) Buttons.
5. Push the MAIN MENU Button to return to the Menu.
6. Push the MAIN MENU Button again to return to normal viewing.

Picture Menu	Function
DYNAMIC	For viewing in brightly lit rooms. This menu selects higher than normal levels of Brightness and Contrast.
STANDARD	For viewing in normal (evening lighting) environments. This menu selects the normal levels of Brightness and Contrast.
SOFT	For viewing in a dark room. This menu selects reduced levels of Brightness and Contrast.

Note:

1. You can change the level for each function (Colour, NTSC-Tint, Bright, Contrast and Sharpness for each picture menu option.
2. Picture menu levels can be set for TV, AV1, AV2, AV3 and AV4 modes.

Item	Effect	Indicator
COLOUR	◀ Less ▶ More	
NTSC-TINT	◀ Reddish ▶ Greenish	
BRIGHT	◀ Darker ▶ Brighter	
CONTRAST	◀ Less ▶ More	
SHARPNESS	◀ Softer ▶ Sharper	

Note:

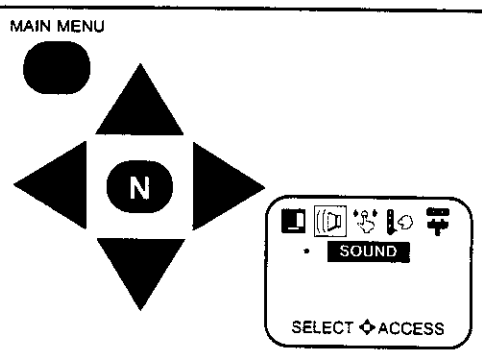
1. The NTSC-Tint only appears in one of the AV Modes. Adjustment is possible at all times but it only takes effect if an NTSC picture is being viewed.

Normalisation N

Pressing the Normal (N) Button on the remote control, when the Picture Menu is displayed will return all picture settings to the factory preset levels. This is called "Normalisation".
Normalisation *will not* occur if the Picture Menu is not displayed when the Normal (N) Button is pressed.

Main Menu

Sound Menu Operation

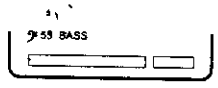
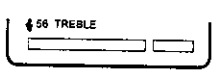
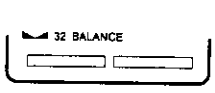


1. Push the MAIN MENU Button.
2. Select the SOUND Menu using the Left (◀) or Right (▶) Button. When the Sound symbol is highlighted, the SOUND Menu has been selected. Push the Down (▼) Button to access the Menu options.
3. Choose the option by using the Up (▲) or Down (▼) Buttons.
4. Adjust the setting of the option using theLeft (◀) or Right (▶) Buttons.
5. Push the MAIN MENU Button to return to the Menu.
6. Push the MAIN MENU Button again to return to normal viewing.

Picture Menu	Function
DYNAMIC	Amplifies the Low Frequencies and outputs optimum sound. Used for music programmes.
STANDARD	For normal use.
SOFT	Sounds such as the human voice etc are adjusted to be easily heard and music is adjusted to give background impression.

Note:

1. Sound menu levels can be set for TV, AV1, AV2, AV3 and AV4 modes.

Item	Effect	Indicator
BASS	◀ Less ▶ More	
TREBLE	◀ Less ▶ More	
BALANCE	◀ Left ▶ Right	

Note:

1. The NTSC-Tint adjustment is possible at all times but it only takes effect if an NTSC picture is being viewed.

SURROUND

Switch the SURROUND ON and OFF using the Left (◀) or Right (▶) Buttons.

Pressing these buttons

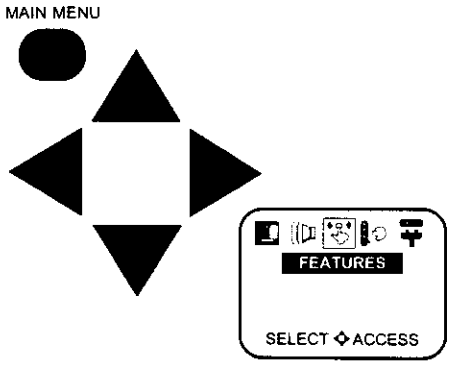
- During Stereo broadcasts switches between "STEREO SURROUND" and "SURROUND OFF".
- During Mono broadcasts switches between "MONO SURROUND" and "SURROUND OFF".
- In the AV Mode switches between "STEREO SURROUND" , "MONO SURROUND" and "SURROUND OFF".

Normalisation N

Pressing the Normal (N) Button on the remote control, when the Sound Menu is displayed will return all sound settings to the factory preset levels. This is called "Normalisation".
Normalisation *will not* occur if the Sound Menu is not displayed when the Normal (N) Button is pressed.

Main Menu

Features Menu Operation



1. Push the MAIN MENU Button.
2. Select the FEATURES Menu using the Left (◀) or Right (▶) Button. When the Features symbol is highlighted, the FEATURES Menu has been selected. Push the Down (▼) Button to access the Menu options.
3. Choose the option by using the Up (▲) or Down (▼) Buttons.
4. Adjust the setting of the option using the Left (◀) or Right (▶) Buttons.
5. Push the MAIN MENU Button to return to the Menu.
6. Push the MAIN MENU Button again to return to normal viewing.

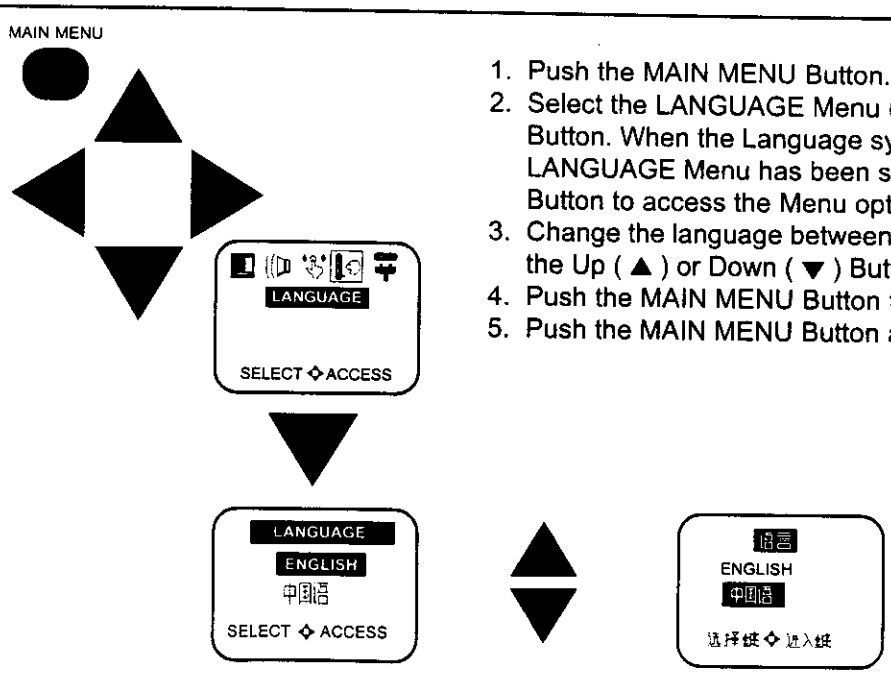
Menu Item	Indicator	Function
D.PNR	D. PNR STRONG	This Picture Noise Reduction system is designed to reduce picture noise during poor quality reception conditions. Pushing the left or right buttons will change the D.PNR setting between OFF, WEAK, STRONG and AUTO.
P.AI	P.AI OFF	P – AI (Picture – Artificial Intelligence) When the P – AI is turned on it continually and precisely detects fine differences in the picture signal. It also detects the differences in the brightness, black level and contrast levels. This function automatically adjusts the picture to the best possible quality for the scene and reproduces images that provide a sense of depth.
C. TEMP	C. TEMP STANDARD	C. TEMP (Colour Temperature) Mode The C. TEMP control allows you to change the White balance setting between Standard, Cool and Warm.
CH COLOUR SET	CH COLOUR SET	Colour density varying between broadcast channels can be adjusted to three levels for each channel received.
DEMO / D.PNR	DEMO / D.PNR	This demonstration splits the screen. Normal picture will be shown on the left and a D.PNR picture on the right. It allows you to see the effect of the D.PNR operation.
BLUEBACK	BLUEBACK ON	When no picture is received or when the signal is very weak, the screen reverts to a blue background and the sound is muted. This feature can be turned Off to continue watching weak signals. It may be necessary to turn the BLUEBACK off when watching a videotape when CUE or REVIEW have been selected.

Main Menu

Features Menu Operation

Menu Item	Indicator	Function
VCR/GAME	VCR/GAME ON	Reproduction of irregular signals such as certain video games or some rental video tapes may be improved by turning the VCR/GAME feature On.
AV SKIP	AV SKIP AV1 OFF AV2 OFF AV3 ON AV4 ON	Pressing the TV/AV Button cycles through all the AV inputs. When there is no equipment connected, unused AV inputs can be skipped. Use the Left (◀) or Right (▶) Button to switch AV ON or OFF.
CHILD LOCK	CHILD LOCK OFF	CHILD LOCK allows you to "lock out" a channel to prevent a child from watching a particular programme. Select the channel to be locked before pressing the Main Menu button. Use the Left (◀) or Right (▶) Button to switch child lock ON and OFF.
GEOMAGNETIC	GEOMAGNETIC 0	Geomagnetic conditions at the television's location can sometimes cause blurring of colours and discoloured patches on the screen. Adjusting the GEOMAGNETIC level may overcome this problem. If colour patches persist turn the television power OFF for 30 minutes. If the patches still persist it may be necessary to change the location of the television.

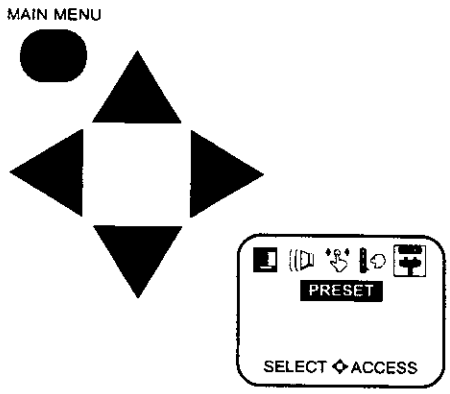
Language Menu Operation



1. Push the MAIN MENU Button.
2. Select the LANGUAGE Menu using the Left (◀) or Right (▶) Button. When the Language symbol is highlighted, the LANGUAGE Menu has been selected. Push the Down (▼) Button to access the Menu options.
3. Change the language between English and Chinese by using the Up (▲) or Down (▼) Buttons.
4. Push the MAIN MENU Button to return to the Menu.
5. Push the MAIN MENU Button again to return to normal viewing.

Main Menu

Preset Menu Operation



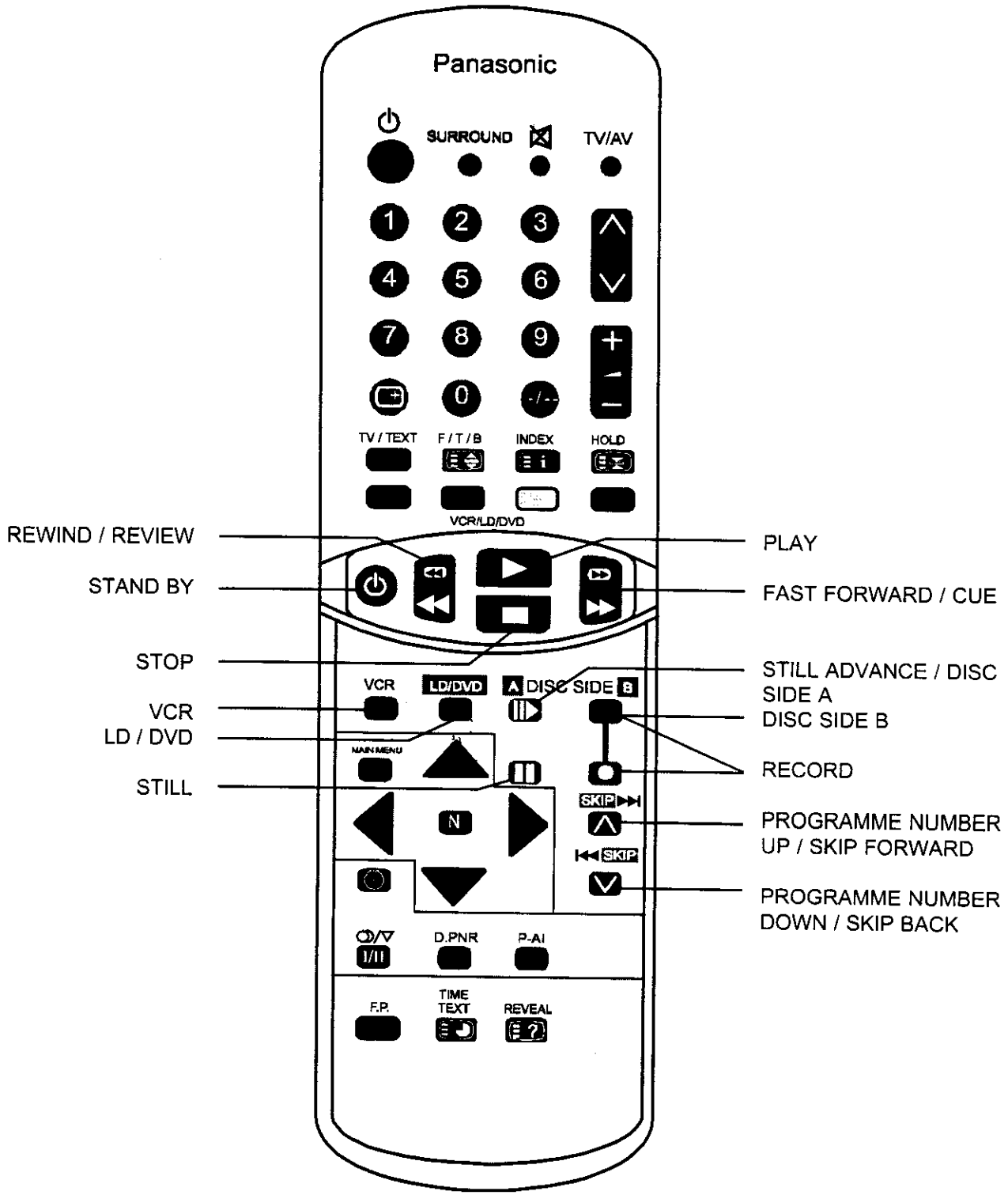
1. Push the MAIN MENU Button.
2. Select the PRESET Menu using the Left (◀) or Right (▶) Button. When the Preset symbol is highlighted, the PRESET Menu has been selected. Push the Down (▼) Button to access the Menu options.
3. Choose the option by using the Up (▲) or Down (▼) Buttons.
4. Adjust the setting of the option using theLeft (◀) or Right (▶) Buttons.
5. Push the MAIN MENU Button to return to the Menu.
6. Push the MAIN MENU Button again to return to normal viewing.

Menu Item	Indicator	Function
CH SELECT	CH SELECT POS	Used to change the remote control channel select between direct access and position. See page 25.
SYS SELECT	SYS SELECT AUST	Used to switch between Australian and New Zealand / Indonesian systems. See page 27.
AUTO TUNE	AUTO TUNE	Used to automatically retune all programme location numbers. See page 28.
MANUAL TUNE	MANUAL TUNE	Used to manually retune individual programme location numbers. See page 29.
COLOUR SYS	COLOUR SYS AUTO	Used to select the most appropriate colour system for the type of picture being watched. See page 30.
FINE TUNE	FINE TUNE	Used to fine tune a broadcast signal. See page 31.
SKIP	SKIP ON	Used to bypass programme locations which do not have a broadcast station allocated to them. See page 32.

Remote Control VCR/LD/DVD Operation

This remote control has been designed to work with a variety of VCRs, Laser Disks and DVDs.

Please refer to page 21 for details of manufacturers' codes.

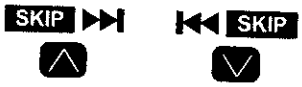


*** WARNING:**

Unauthorised recording of material from Television Broadcasts or from other video and/or audio sources may contravene copyright laws.

Remote Control VCR/LD/DVD Operation

Remote Control VCR/LD/DVD Buttons

Button	Function	
	VCR	LD/DVD
	REWIND / REVIEW Used to rewind the tape quickly or watch the tape in reverse.	**REWIND / REVIEW** Used to play the disc in reverse while watching the picture.
	POWER BUTTON Used to switch the VCR ON or OFF (Stand-by).	**POWER BUTTON** Used to switch the LD/DVD ON or OFF (Stand-by).
	STOP Used to stop the VCR.	**STOP** Used to stop the LD/DVD.
	VCR Selects VCR	**LD/DVD** Selects LD/DVD.
	PAUSE Pauses the tape during play.	**PAUSE** Pauses the disc during play.
	PLAY Used to start the VCR playing.	**PLAY** Used to start the LD/DVD playing.
	FAST FORWARD / CUE Used to wind the tape forward quickly or to watch the tape at fast speed	**FAST FORWARD / CUE** Used to watch the disc at fast speed.
	STILL ADVANCE Used to advance the tape One frame at a time. Used With the Pause button.	**DISC SIDE A SELECTION** Used to select the A side of the disc.
	RECORD Press both buttons to Start recording	**DISC SIDE B SELECTION** Used to select the B side of the disc.
	**PROGRAMME NUMBER UP AND DOWN** Used to select the next Higher or lower programme Number.	**PROGRAMME SKIP** Used to skip tracks on the disc.

Remote Control VCR/LD/DVD Operation

Manufacturers' Code Settings

This remote control has been designed to work with a variety of VCRs, Laser Discs and DVDs. In order for this to occur, the setting for the VCR, LD or DVD must be programmed into the Remote Control.

1. To set a VCR, push the remote control VCR Button.
   To set a LD or DVD, push the remote control LD/DVD Button.
2. Push the remote control VCR or LD/DVD Button and keep it pressed.
3. Enter the Manufacturer's two-digit code number using the remote control Number Buttons. (The codes are shown below).
4. Press the STOP button.
5. Release the remote control VCR or LD/DVD Button.
6. Check the operation of the VCR, LD or DVD. If it does not operate correctly, repeat steps 1 to 5 and use an alternate code (if there is one).

VCR CODES

Manufacturer	Code	Manufacturer	Code
Panasonic / National	10, 11, 12, 13	NEC	40, 41, 42, 43
AIWA	15, 16	ORION	45, 46
FUJITSU	20	Philips	50
HITACHI	25, 26, 27	SANYO	55, 56, 57, 58
JVC	30, 31, 32	SHARP	60, 61
MITSUBISHI	35, 36	SONY	65, 66, 67
		TOSHIBA	70, 71

LD CODES

Manufacturer	Code	Manufacturer	Code
Panasonic	10, 11, 12, 13	SAMSUNG	30
KENWOOD	15, 16	SHARP	35
PHILIPS	20	SONY	40, 41, 42, 43
PIONEER	25		

DVD CODES

Manufacturer	Code	
Panasonic	70	

NOTES:

1. If the batteries are removed from the remote control the Manufacturer's codes are lost and must be reprogrammed.
2. The list of manufacturer's codes is given as a guideline only. Panasonic cannot guarantee that any other manufacturer's product will work with this remote control.

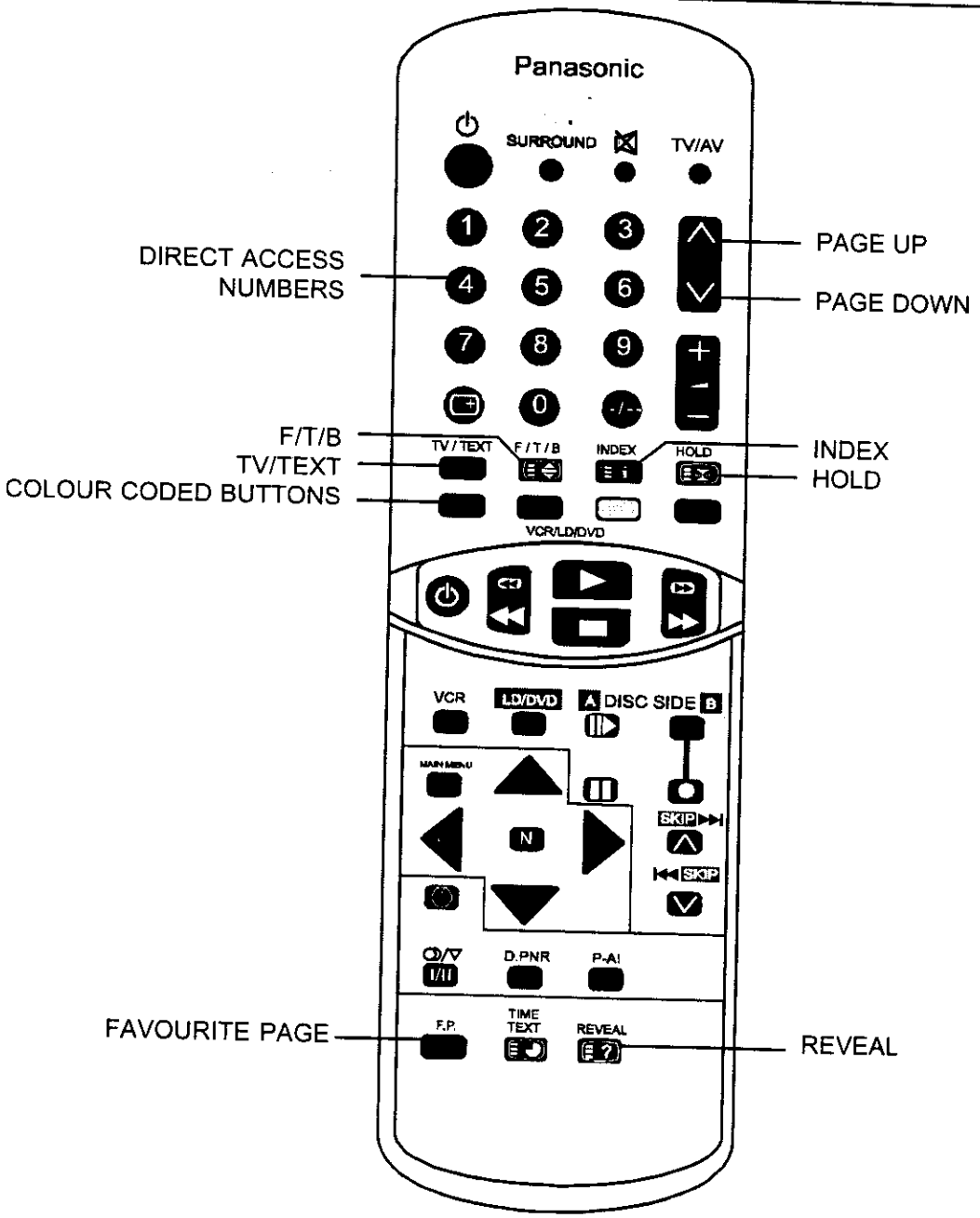
Teletext Operation (TX-68P90Z Only)

Teletext is only available on certain broadcast channels.
The time taken to display the pages and sub-pages is governed by the teletext transmitter and not by the television.

LIST MODE
In LIST mode, four different coloured page numbers are shown at the bottom of the screen. Each of these numbers can be altered and stored in the TV's memory. These coloured page numbers correspond to the colour coded buttons on the remote control.

FASTEXT MODE
In FASTEXT mode, four differently coloured subjects are displayed at the bottom of the screen. To access more information about one of these subjects, push the corresponding colour coded button on the remote control.

Remote Control Teletext Operation (TX-68P90Z Only)

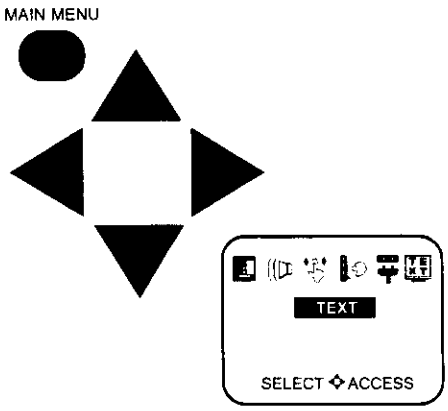


Remote Control Teletext Operation (TX-68P90Z Only)

BUTTON	WHAT IT DOES
0 ~ 9	**NUMBER BUTTONS** Used to select the required Teletext page or sub-page number.
F/T/B	**F/T/B (FULL / TOP / BOTTOM)** This button is used when difficulty is experienced in reading text on the screen. Pushing the F/T/B Button expands and displays the upper half of the screen. Pushing the F/T/B Button again expands and displays the lower half of the screen. Pushing the F/T/B Button a third time returns the display to normal condition.
TV / TEXT	**TV/TEXT** This button is used to switch between TV and Teletext Modes. The Teletext screen will only appear if the selected channel is transmitting Teletext information.
	COLOUR CODED BUTTONS In FASTEXT mode these buttons correspond to different subjects. In LIST mode they correspond to different page numbers.
F.P.	**F.P. (FAVOURITE PAGE)** This feature will store a favourite page in the TV memory. 1. The TV must be in the LIST mode and receiving a teletext broadcast. 2. Push the Light Blue button. 3. Select the page number. 4. Push LIST/STORE (see page 24). 5. The page number is now stored. Push F.P. to recall this page.
	TIME TEXT When a Page has more than one screen (sub-page) of information, you may have to wait for some time before the sub-page you require becomes available. With this function it is possible to enter the number of the desired sub-page. 1. Select Text Mode and choose a page. 2. Press the TIME TEXT button 3. When the page has been received, the sub-pages can be viewed. The sub-page number must be entered as a four digit number e.g. sub-page 3 would be entered as 0003. Press TIME TEXT to return to television viewing.
	PAGE NUMBER UP & DOWN BUTTONS These buttons are used to select the next higher or lower page. Unused pages are skipped (bypassed).
	INDEX This button is used to return to the Main Index Page.
	HOLD When a selected Teletext page consists of a number of sub-pages the sub-pages will rotate automatically unless the "Hold" function has been activated. Pushing this button will cause the sub-page to stay on the screen. Pushing Hold again will cancel the operation. Whenever this function is activated the symbol will appear on the screen.
	REVEAL Some Text pages contain concealed information, e.g. the solution to a puzzle. To reveal this information press the Reveal Button. To hide the information, press the Reveal Button again.

Main Menu

Text Menu Operation (TX-68P90Z Only)



1. Push the TV / TEXT Button to select Teletext mode.
2. Push the MAIN MENU Button.
3. Select the TEXT Menu using the Left (◀) or Right (▶) Button. When the Text symbol is highlighted, the TEXT Menu has been selected. Push the Down (▼) Button to access the Menu options.
4. Choose the option by using the Up (▲) or Down (▼) Buttons.
5. Adjust the setting of the option using the Left (◀) or Right (▶) Buttons.
6. Push the MAIN MENU Button to return to the Menu.
7. Push the MAIN MENU Button again to return to normal viewing.

DISPLAY CANCEL

Push the Left ( ) or Right (-) Button to view the TV picture while waiting for a teletext page. When found, the page number will be displayed the at the top left of the screen.

News Flash

When a news flash page has been selected push theLeft (◀) or Right (▶) Button to view the TV picture. When a news flash is received it will be displayed on the screen.

Update

Push the Left (◀) or Right (▶) Button to view the TV picture while waiting for updates of information on certain pages. When the update is received the page number will be displayed on the top left of the screen.

LIST STORE

In LIST mode the page numbers stored in the four coloured buttons can be changed for each teletext channel.

Push a coloured button, enter the page number and push the Left (◀) or Right (▶) Button to store the page. Keep the button pressed until the coloured numbers at the bottom of the screen change colour.

TEXT MODE

Push the Left (◀) or Right (▶) Button to switch between the LIST and FASTEXT modes. When in LIST mode the letter "L" appears on the screen next to the red colour.

NOTES:

1. PICTURE MENU
   In Teletext mode only the brightness and contrast can be adjusted.
2. FEATURES MENU
   In Teletext mode the Child Lock option is not available.
3. PRESET MENU
   In Teletext mode only the Fine Tuning can be adjusted.

Tuning Procedure

Channel Selection Mode

This television has two modes of channel selection: DIRECT and POS.

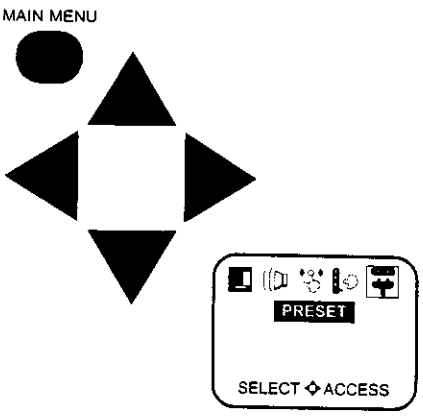
In the DIRECT Mode the actual broadcast channel number is selected using the remote control Direct Access Number Buttons.

In the POS. Mode the television channels are "stored" in a Programme Location Number.

Channel Selection Mode Using Front Panel Controls

1. Open the front panel door.
2. Push the PRE. Button once.
3. Press the Volume Up (+) or Volume Up (-) Button to switch between POS. and DIRECT.
4. Return the television to normal operation by pushing the PRE. Button six times.

Channel Selection Mode Using Remote Control



1. Push the MAIN MENU Button.
2. Select the PRESET Menu using the Left (◀) or Right (▶) Button. When the Preset symbol is highlighted, the PRESET Menu has been selected. Push the Down (▼) Button to access the Menu options.
3. Change the language between English and Chinese by using the Up (▲) or Down (▼) Buttons.
4. Push the MAIN MENU Button to return to the Menu.
5. Push the MAIN MENU Button again to return to normal viewing.

Tuning Procedure

Position Select (POS.)

When the Channel Selection is set to the POS. mode 100 Programme Location numbers are available (0 ~ 99). Selection of numbers above 9 is by use of the Two Digit Programme Number Selection Button (- / - -). Please refer to page 10.
If an Auto Tune is performed (see page 28) the television searches for a broadcast station and allocates it to the next available Programme Location Number.
For example, if the available channels in your area are 2, 7, 9, 10 and 28 the Auto tune will allocate the channels as shown:

Programme Number	Channel Display	Received Channel
1	CH2	2
2	CH7	7
3	CH9	9
4	CH10	10
5	CH28	28

All other Programme Numbers will not change.

Direct Select

When the Channel Selection is set to the Direct Select mode you are able to select the broadcast channel by entering its channel number. See the table on page 27 for available channels. Selection of broadcast channels is by use of the Direct Programme Number Selection Buttons (0 ~ 9). Please refer to page 10.
If an Auto Tune is performed (see page 28) the television searches for a broadcast station and allocates it to the same Programme Location Number as the channel number.
For example, if the available channels in your area are 2, 7, 9, 10 and 28 the Auto tune will allocate the channels as shown:

Programme Number	Channel Display	Received Channel
2	CH2	2
7	CH7	7
9	CH9	9
10	CH10	10
28	CH28	28

All other Programme Numbers will not change.

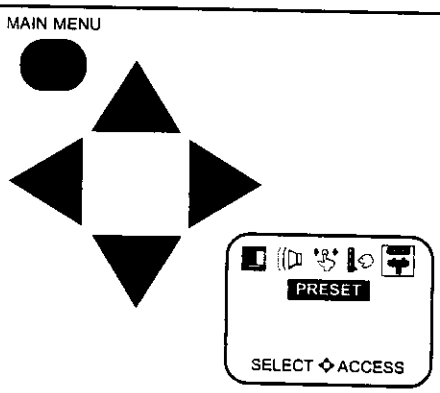
Tuning Procedure

SYS Selection Mode

SYS Selection Using Front Panel Controls

1. Open the front panel door.
2. Push the PRE. Button twice.
3. Press the Volume Up (+) or Volume Up (-) Button to switch between NZ/INA and AUS.
4. Return the television to normal operation by pushing the PRE. Button five times.

SYS Selection Using Remote Control



1. Push the MAIN MENU Button.
2. Select the PRESET Menu using the Left (◀) or Right (▶) Button. When the Preset symbol is highlighted, the PRESET Menu has been selected. Push the Down (▼) Button to access the SYS SELECT option.
3. Change Setting from AUS to NZ/INA and vice versa using the Left (◀) or Right (▶) Buttons.
4. Return the television to normal operation by pushing the MAIN MENU Button twice.

Channel Allocation

COUNTRY	AUSTRALIA	NZ / INDONESIA
CH DISPLAY	RECEIVED CHANNEL	
0	0	Nil
1 ~ 11	1 ~ 11	1 ~ 11
12	12	Nil
13 ~ 20	Nil	Nil
21 ~ 27	Nil	21 ~ 27
28 ~ 69	28 ~ 69	28 ~ 69
70 ~ 73	Nil	Nil
74 ~ 76	Nil	S'1 ~ S'3
77 ~ 79	Nil	Nil
80 ~ 89	Nil	S1 ~ S10
90	5A	S11
91	9A	S12
92 ~ 120	Nil	S13 ~ S41
121 ~ 125	Nil	Nil

These numbers are actual broadcast channels and are not the same as the Programme Location Numbers on the remote control. When the television is in the DIRECT mode (see Page 26) the available channels can be directly accessed using the instructions on page 10.

Tuning Procedure

Automatic Tune

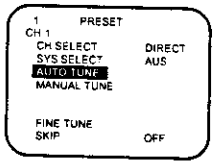
This television has been factory tuned to all major city channels. Use the automatic tuning procedure only if you wish to reset ALL Programme Location Numbers. Refer to page 26 for a description of how DIRECT or POS. selection affects the Automatic Tuning. Refer to "Manual Tune" on page 29 if you only want to retune one or two Programme Location Numbers.

The television should be switched ON and the TV/AV Switch set to TV. Channel Select and Country Sys must already be set.

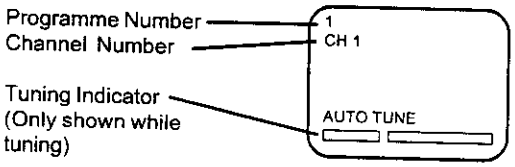
When you start the automatic search, the television will automatically search for television broadcasts through both VHF bands and the UHF band. During this process all of the available television broadcast channels will be automatically allocated to sequential Programme Number locations starting with location 1.

Auto Tuning Using the Front Panel Controls

1. Open the front panel door .
2. Push the PRE. Button three times.

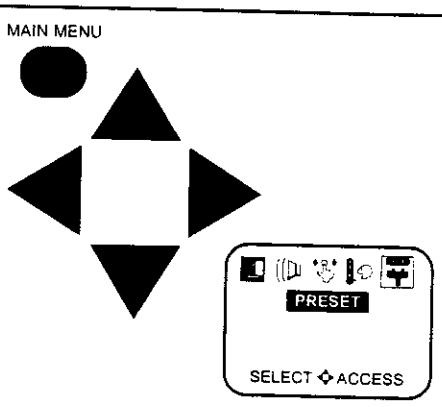


3. Press the Volume Up (+) Button to start the Auto Tune. Auto Tune will automatically allocate each received broadcast signal to a sequential Programme Number. As each broadcast station is stored the Panasonic Logo will momentarily replace the tuning indicator. The operation will cease when all available channels have been tuned.



4. Return the television to normal operation by pushing the PRE. Button four times.

Auto Tuning Using the Remote Control



1. Push the MAIN MENU Button.
2. Select the PRESET Menu using the Left (◀) or Right (▶) Button. When the Preset symbol is highlighted, the Preset Menu has been selected.
   Push the Down (▼) Button to access the AUTO TUNE option.
3. Press the Right (▶) Button to start the Auto Tune. Auto Tune will automatically allocate each received broadcast signal to a sequential Programme Number. As each broadcast station is stored the Panasonic Logo will momentarily replace the tuning indicator. The operation will cease when all available channels have been tuned.
4. Return the television to normal operation by pushing the MAIN MENU Button twice.

After you have finished with the automatic tuning and returned to normal viewing, push the Programme Number Up (■) Button to confirm the tuning condition for each Programme Number. If a Programme Number is unwanted, it is possible to "SKIP" or bypass that Programme Number. Please refer to "SKIP" setting details on page 32.

Tuning Procedure

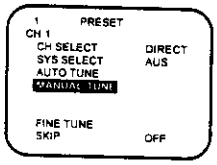
Manual Tune

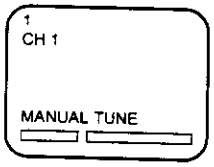
This Television has been factory tuned to all the major city channels. Use this tuning procedure only if you wish to reset individual Programme Numbers.

The television should be switched ON and the TV/AV Switch set to TV. Channel Select and Country Sys must already be set.

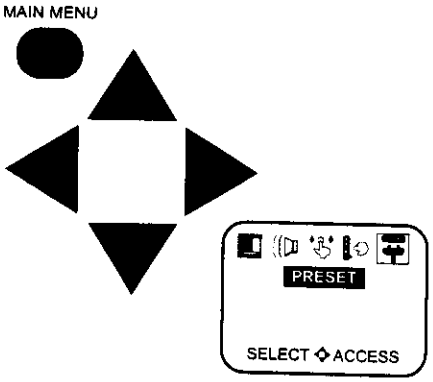
Manual Tuning Using the Front Panel Controls

1. Open the front panel door.
2. Push the PRE. Button four times.
3. Select the Programme Location Number you to tune using the front panel Programme Number Up (Λ) or Down (V) Buttons.
4. Press the Volume Up (+) or Volume Down (-) Button to start the Manual Tune.
5. As each broadcast station is stored the Panasonic Logo will momentarily replace the tuning indicator. If you do not want to save this broadcast station in this programme location number, repeat step 4.
6. When you are satisfied with your selection you can
   - Tune more stations by repeating steps 3, 4 and 5
   - Return to normal operation by pushing the PRE. Button three times.





Auto Tuning Using the Remote Control



1. Push the MAIN MENU Button.
2. Select the PRESET Menu using the Left (◀) or Right (▶) Button. When the Preset symbol is highlighted, the Preset Menu has been selected.
   Push the Down (▼) Button to access the MANUAL TUNE option.
3. Select the Programme Location Number you to tune using the front panel Programme Number Up or Down Buttons.
4. Push the Left (◀) or Right (▶) Button to start the Manual Tune.
5. As each broadcast station is stored the Panasonic Logo will momentarily replace the tuning indicator. If you do not want to save this broadcast station in this programme location number, repeat step 4.
6. When you are satisfied with your selection you can
   - Tune more stations by repeating steps 3, 4 and 5
   - Return to normal operation by pushing the MAIN MENU Button twice.

Tuning the Television to a VCR

1. Turn the VCR On and either start a known tape playing or set the VCR Test Signal, if fitted, to On (refer to the VCR operating instructions).
2. Repeat steps 2, 3 and 4 of the Manual Tuning procedure above. The television will treat the VCR as if it was a normal television broadcast station.

NOTES:

1. The antenna lead must be connected to the VCR and the VCR RF-Out must be connected to the TV RF-In. Please refer to page 33.
2. The picture and sound quality are usually much better if the VCR is connected using the AV Terminals. Please refer to page 34.

Tuning Procedure

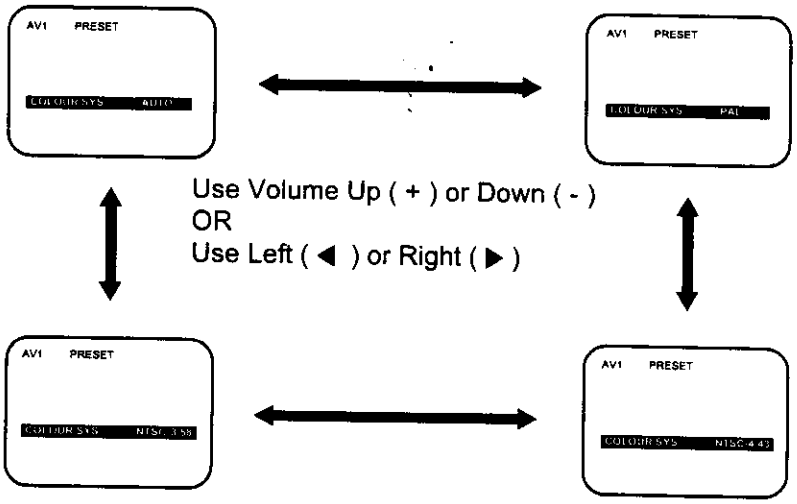
Colour SYS

This function is only available on signals received through the AV inputs. If a clear picture with correct colours cannot be obtained, a change to the Colour System may improve the picture. The television should be switched ON and the TV/AV Switch set to AV1, AV2, AV3 or AV4.

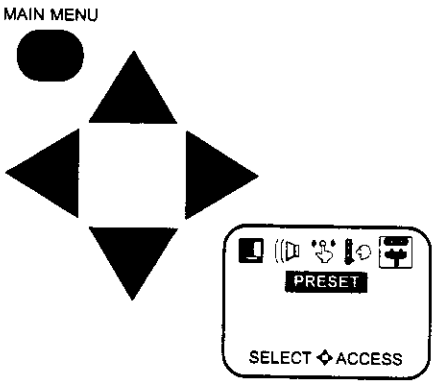
The Colour SYS is normally set to AUTO and generally does not need to be changed.

Colour SYS Setting Using the Front Panel Controls

1. Open the front panel door.
2. Press the TV/AV button to select the AV Mode required.
3. Push the PRE. Button once.
4. Press the Volume Up (+) or Volume Down (-) Button to switch between AUTO, PAL, NTSC-4.43 and NTSC-3.58.
5. Return the television to normal operation by pushing the PRE. Button once.



Colour SYS Setting Using the Remote Control



1. Push the MAIN MENU Button.
2. Select the PRESET Menu using the Left (◀) or Right (▶) Button. When the Preset symbol is highlighted, the Preset Menu has been selected.
3. Push the Down (▼) Button to access the Colour SYS option.
4. Press the Left (◀) or Right (▶) Button to switch between AUTO, PAL, NTSC-4.43 and NTSC-3.58.
5. Push the MAIN MENU Button twice to return the television to normal operation

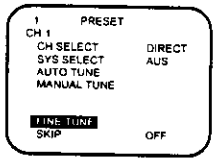
Tuning Procedure

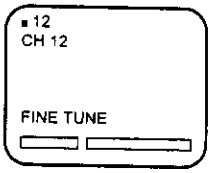
Fine Tuning (Automatic Frequency Control)

Under normal viewing conditions the AFC (Automatic Frequency Control) remains "ON". However in areas of poor reception or constant interference a slight adjustment to the tuning may improve the picture quality. The television should be turned ON and the TV/AV switch set to TV. Channel Select and Country Sys must already be set.

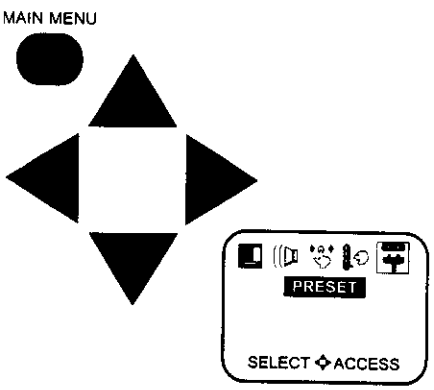
Fine Tuning Using the Front Panel Controls

1. Open the front panel door.
2. Push the PRE. Button five times.
3. Select the Programme Location Number you to fine tune using the front panel Programme Number Up or Down Buttons.
4. Press the Volume Up (+) or Volume Down (-) Button to start the Fine Tune.
5. The fine tuning symbol (■) will appear to the left of the Programme Location Number indicator.
6. When you are satisfied with your selection you can
   - fine tune more stations by repeating steps 3, 4 and 5
   - Return the television to normal operation by pushing the PRE. Button twice.





Fine Tuning Using the Remote Control



1. Push the MAIN MENU Button.
2. Select the PRESET Menu using the Left (◀) or Right (▶) Button. When the Preset symbol is highlighted, the Preset Menu has been selected.
3. Push the Down (▼) Button to access the FINE TUNE option.
4. Press the Left (◀) or Right (▶) Button to to start the Fine Tune.
6. The fine tuning symbol (■) will appear to the left of the Programme Location Number indicator.
7. When you are satisfied with your selection you can
   - fine tune more stations by repeating steps 4, 5 and 6.
   - Return the television to normal operation by pushing the MAIN MENU Button once.

Canceling the Fine Tuning

To cancel the Fine Tuning follow the Manual Tune procedure on page 29.

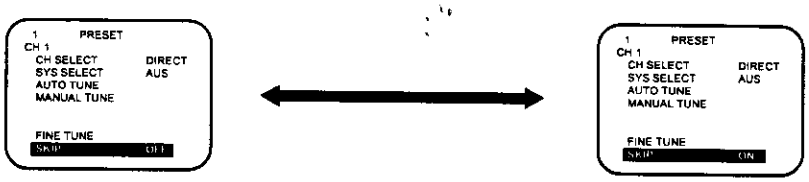
Tuning Procedure

Skip Operation

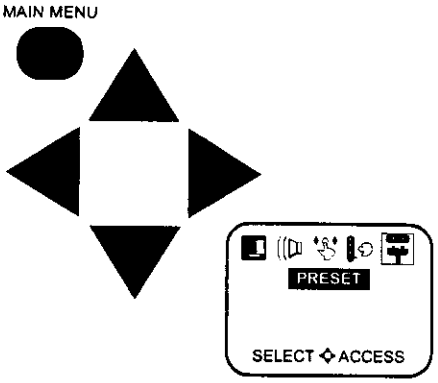
This option allows you to "SKIP" (bypass) the unused or undesired Programme Numbers. The Function is only applicable when the Programme Number Up or down buttons are pressed. The use of the remote control Direct Programme Number Buttons overrides the Skip function. The television should be switched ON and the TV/AV Switch set to TV.

Skip Operation Using the Front Panel Controls

1. Open the front panel door.
2. Push the PRE. Button six times.
3. Select the Programme Location Number you to skip using the front panel Programme Number Up or Down Buttons.
4. Press the Volume Up (+) or Volume Down (-) Button to switch to SKIP ON.
5. When you are satisfied with your selection you can
   - Skip more Programme Location Numbers by repeating steps 3 and 4.
   - Return the television to normal operation by pushing the PRE. Button once.



Skip Operation Using the Remote Control



1. Push the MAIN MENU Button.
2. Select the PRESET Menu using the Left (◀) or Right (▶) Button. When the Preset symbol is highlighted, the Preset Menu has been selected.
3. Push the Down (▼) Button to access the SKIP option.
4. Select the Programme Location Number you to skip using the Remote Control Programme Number Up or Down Buttons.
5. Push the Left (◀) or Right (▶) Button to switch to SKIP ON.
6. When you are satisfied with your selection you can
   - Skip more Programme Location Numbers by repeating steps 4 and 5.
   - Return the television to normal operation by pushing the MAIN MENU Button twice.

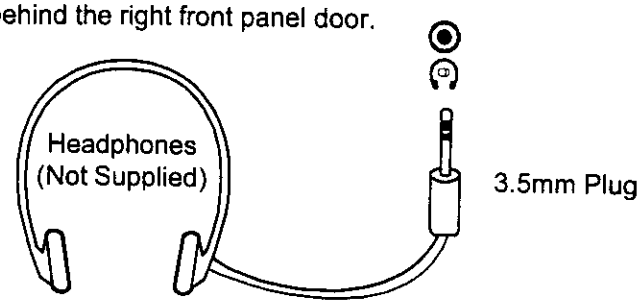
How to Cancel the Skip Operation

To cancel the Skip function follow the procedure outlined above. Use the appropriate button to switch to SKIP OFF.

Connecting Equipment to the TV

Connecting Headphones

The television has a headphone socket behind the right front panel door.

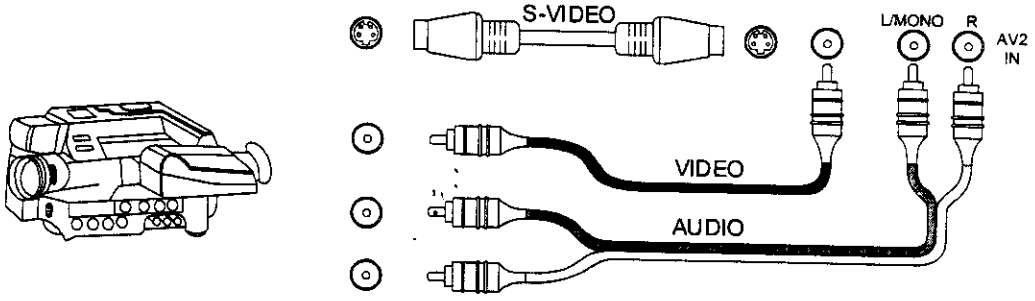


When headphones are plugged into the headphone socket the speakers are turned off. The headphone volume is adjusted by the main volume control.

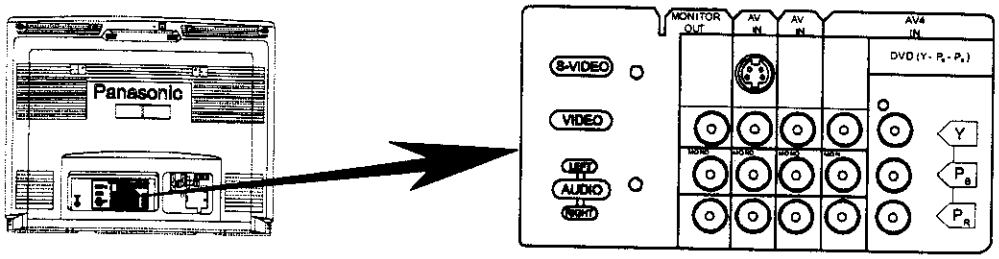
Front Panel Connections

Behind the front panel door is the headphone socket and the AV2 input.

The front input terminals allow quick and easy access for computer games, video cameras and other equipment which is not usually permanently connected.



Rear Panel Connections



When using a VCR with the television *always* connect the Aerial to the VCR and connect an RF Cable (not supplied) between the VCR RF-Out and the television RF-In.

You can watch videos by either tuning the television to the VCR (see page 29) or by connecting the VCR to the rear AV terminals.

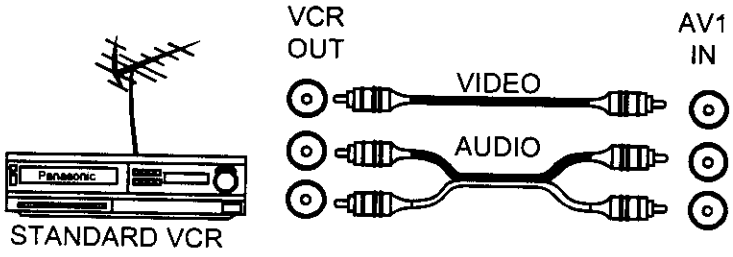
RF Cable (Not Supplied)

Note: When connecting a mono VCR through the RF-In, please switch the TV to mono.

Connecting Equipment to the TV

Connecting a Standard VCR to the AV Input

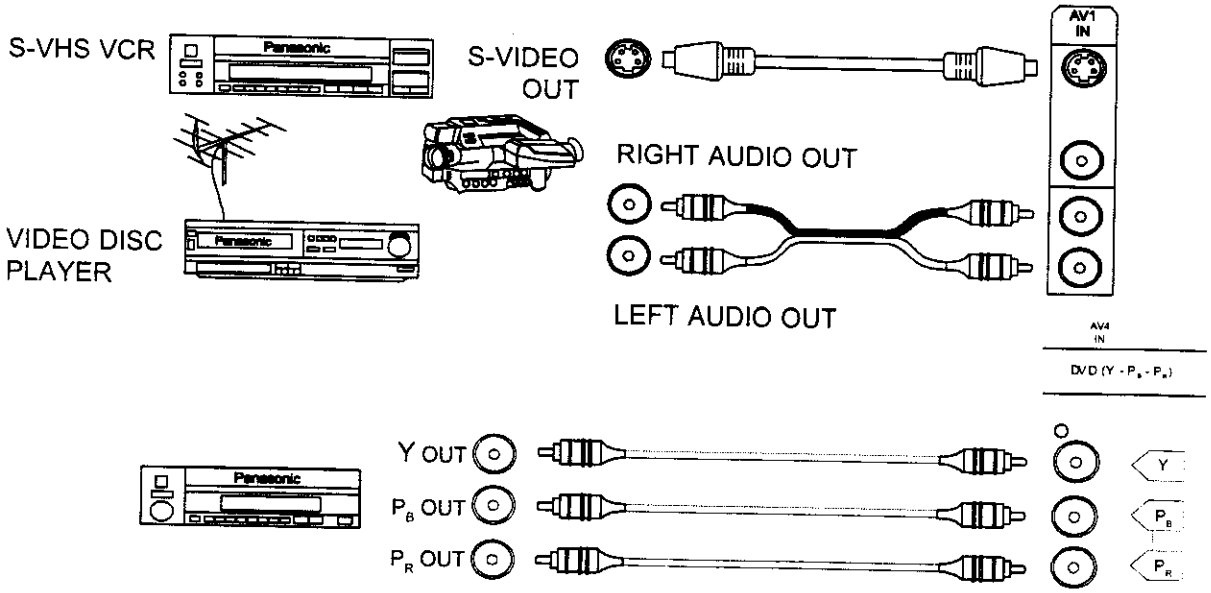
Most standard Video Cassette Recorders use RCA type video and audio connectors. If your VCR has different type connectors please refer to the VCR instruction book for details.



NOTE: A mono VCR can be connected to this television. Connect the VCR Audio out to the Left Audio input on the television. The sound will automatically be directed to both speakers.

Connecting S-Video & DVD Equipment to the AV Input

S-Video equipment uses a 4Pin Mini Din (Male) plug for the video and RCA plugs for the audio. When an S-Video cable is connected to an S-Video input terminal, the RCA video terminal for that AV position will be disconnected.



Connecting Equipment to the TV

Monitor Out

The Monitor Out terminals reproduce the signals currently on the television screen. The on-screen signals could be a television programme or signals connected to one of the AV inputs.

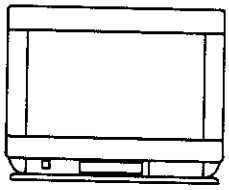
The Monitor Out facility can be used to allow one video source (videotape, video disc etc.) to be connected to more than one television. Connect the Monitor out from this television to the AV Input of the second television.

If a video recorder is connected to the Monitor Out and video sources (VCR, video disc, camera etc.) are connected to one or more of the AV inputs, the television becomes a visual display for tape editing or copying. *

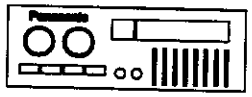
The Monitor Out Audio can also be connected to a stereo amplifier or other hi-fi equipment.

STANDARD VCR

TELEVISION USED AS A MONITOR

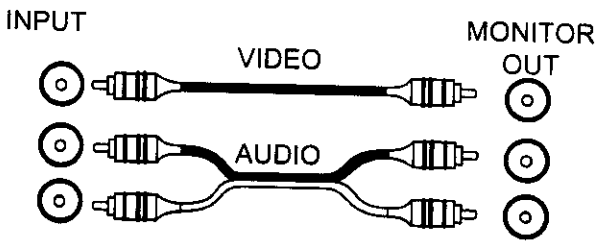


AUDIO HI FI AMPLIFIER



(NO VIDEO CONNECTION)

NOTE:
Never connect the same video recorder or other device to both the VIDEO IN and MONITOR OUT terminals of this television as this could cause incorrect operation.



*** WARNING**
Unauthorised recording of material from Television Broadcasts or from other video and/or audio sources may contravene copyright laws.

Customer's Record

The serial number of this product can be found on its rear cover and on the carton. It is recommended that you note the serial number and other details in the space provided and retain this booklet in a safe place as a permanent record of your purchase to aid in identification in the event of theft or loss.

Model No. _____

Serial No. PA - _____

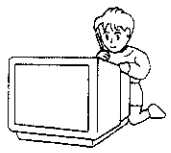
Purchase Date _____

Purchased From _____

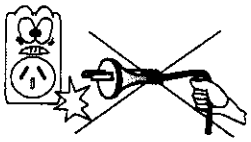
Customer Information

To keep your Panasonic Television in good working order please observe the following warnings and cautions. Please be careful with this television. Like all electrical equipment it can cause serious injury or damage if it is mistreated.

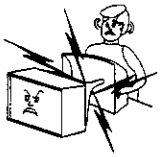
Warnings



Danger
Do not insert foreign objects. (Keep metal or easily inflammable objects out of this television).

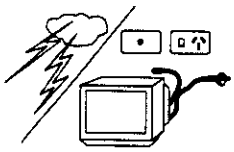


Danger
Always pull the plug out of the wall outlet by holding the plug itself.
Do not pull the plug by the power cord.

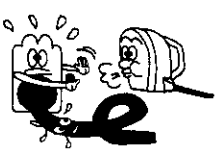


Danger: High Voltage
Do not remove the rear cover, as High Voltage components will be exposed.

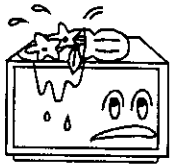
Danger
Do not alter the power cord.
Do not use if the power cord or plug is damaged or if the plug does not fit tightly into the socket.



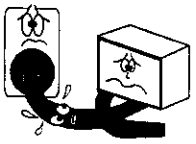
DO NOT touch the aerial cable and metal parts of the television when there is lightning around. During storms switch the television off. **DO NOT** leave in stand-by. Remove the plug from the wall socket.



Do not allow the power cord to come into contact with flame or hot surfaces.

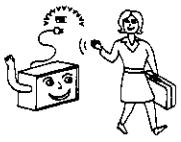


Do not place any containers of water or other liquids on or near this
television.

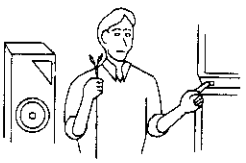


Do not place heavy objects on the power cord.

Cautions

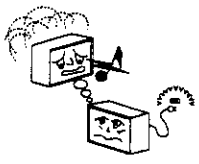


Remove the Power Plug from the wall socket when the Television is not going to be used for an extended period of time.

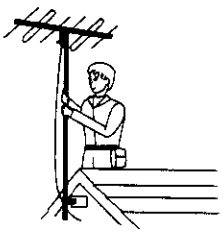


Turn the power OFF before connecting other electrical equipment.

Safety First



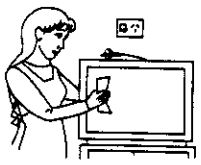
In the advent of unusual operation (e.g. odd sounds, smoke or aromas), turn the television Off and remove the power cord from the wall socket. Then call the Television Service Centre: this may reduce the possibility of expensive repair costs.



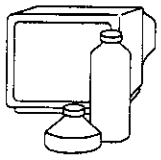
Any external aerial should be installed by a reputable qualified installer and should comply with Australian Standard AS1417.1 or International Standard EIS597-1.

Customer Information

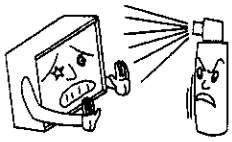
Cleaning the Television



Cabinet and Picture Tube Care
The cabinet and picture tube can be kept in good condition by wiping with a clean, lint free cloth moistened with mild detergent and water. For safety, remove the plug from the power outlet when cleaning.



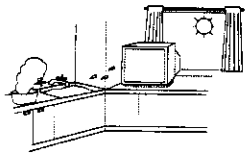
This television contains many plastic parts. For this reason **Do Not** use benzene, thinners or any solutions containing petroleum or other chemicals.



Do not spray insecticide or volatile solvent on the TV. **Do not** allow rubber and vinyl products to stay in contact with the TV for long periods of time. They may cause changes in paint quality.

Remove dirt and soiling by wiping with a soft cloth. Even if the television is heavily soiled do not apply cleaner directly to the unit. Soak a cloth in a solution of neutral cleanser thinned with water. Wring out the cloth, wipe the television clean and finish by wiping with a dry cloth.

Locating the Television

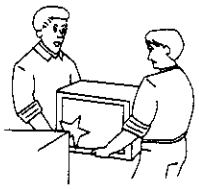


Do not place the TV in humid or dusty locations, or areas exposed to smoke or steam. Avoid exposing the television to direct sunlight or any other sources of direct heat.

Adequate ventilation is essential. Allow a gap of at least 10cm around the TV, even in a cabinet or between shelves.

Caring for the Television

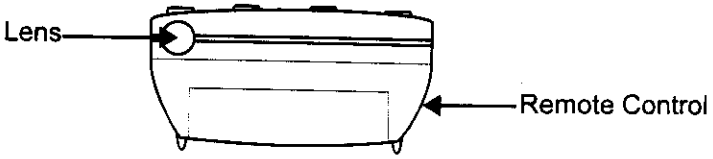
Do not stand or place heavy objects on top of the television.



Do not subject the TV to any physical shocks. Always remove any connector cables when moving the TV. When moving the TV from one place to another wrap it in something protective.

Caring for the Remote Control

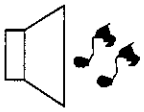
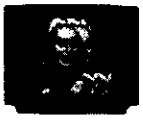
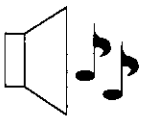
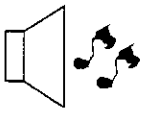
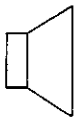
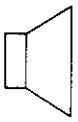
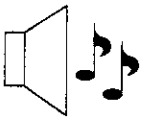
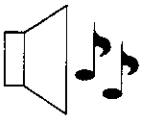
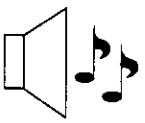
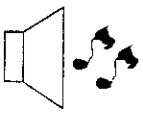
The lens of the Remote Control should be kept clean and free of dirt and grease. Use a soft cloth moistened with water and a mild detergent to keep the lens clean.



Customer Information

Troubleshooting

Some minor problems can be corrected very quickly and easily without the cost of a service call. Determine the symptoms and make a few simple checks as shown below.The location of the nearest service centre can be obtained from the Panasonic Customer Care Centre on 132600.

Picture	Sound	Check
Snowy Picture	 Noisy Sound	Aerial Location, Direction or Connections. If you are watching a tape playback check the state of the Video heads – they may need to be cleaned or replaced. The tape may be old. Check the tracking.
 Multiple Image	 Normal Sound	Aerial Location, Direction or Connections.
Interference	 Noisy Sound	Electrical Appliances, Motorcycles, Cars or Fluorescent Lamps.
Normal Picture	 No Sound	Volume (Check the Mute function) Check the Colour System Mode (AV only). Refer to page 30.
No Picture	 No Sound	Not plugged in, switched OFF or Set to Stand By. Check volume, brightness, and contrast levels. Various internal safety devices may have been triggered. Switch the TV off for a few minutes and try again.
No Colour	 Normal Sound	Colour Control. Colour System Mode (AV only). Refer to page 30. If the picture is from a tape playback, try adjusting the tracking.
Scrambled	 Normal or Weak Sound	Retune the Television. Refer to page 29.
Colour Patches	 Normal Sound	Magnetic Interference from unshielded equipment or the television may have been moved while it was switched ON. (Switch the television OFF with the main power switch and leave it OFF for about 30 minutes. Refer to page 2 and page 17.
Rolling Picture	 Noisy Sound	Colour System Mode (AV only). Refer to page 30.

Specifications

RF Channels

VHF 0 to 12
UHF 21 to 69
S'1 to S'3
S1 to S41

PAL B
PAL G
HYPER TUNER

Receiving Systems

1. PAL B/G	Reception of Off air broadcasts Playback from Video Tape Recorders
2. NTSC 4.43 3. NTSC 3.58 4. PAL 60Hz	Playback from Special Video Tape Recorders and Special Video Disc Players (Via the AV Sockets) only.

Power Requirements

Australia 240Volts ± 10% 50Hz
New Zealand 230Volts ± 10% 50Hz

Power Consumption

180W (Max)
0.7W (Stand-by condition)

Chassis

MD2L

Tuning System

Frequency synthesized, 100 Position (0 to 99) in POS. Mode.
125 Channels in Direct Mode.

Picture Tube

68cmv Viewable (Measured diagonally)

Audio Output

Twin Internal Dome Speaker Plus Centre Speaker System
12W + 12W + 6W

Headphone Socket

3.5mm Stereo

Aerial Impedance

75Ω Unbalanced coaxial

Video / Audio Terminals

S-Video Y: 1.0Vp-p 75Ω
C: 0.3Vp-p 75Ω
Video in 1.0Vp-p, 75Ω
Audio in Approx. 400mV

Monitor Out

Video Out 1.0Vp-p, 75Ω
Audio Out Approx. 400mV

Accessories Supplied

Remote Control TNQE163 (For TC-68P90A)
TNQE190 (For TX-68P90Z)
2 Type 'AA' Batteries
Instruction Manual TQB4A0134

Dimensions

Height: 57.0cm Width: 69.0cm Depth: 49.0cm

Weight

50.0kg (Net)

Note:

Design and Specifications are subject to change without notice.
Weight and Dimensions shown are approximate.

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132600

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